AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method of predicting a fracture path in a~~ a~~ bone using a computer system comprising:

      (a) obtaining image data of the bone in the computer system ~~an image of the bone~~;

      (b) defining two or more positions in the image;

      (c) placing a region of interest (ROI) at each of the two or more positions;

      (d) analyzing electronically each of the ROIs to determine at least one value for two or more parameters selected from the group consisting of bone density, bone micro-architecture, bone macro-anatomy, biomechanical parameters and combinations thereof;

      (e) for each analyzed parameter, assigning electronically the at least one value from each ROI to its respective position, thereby creating a parameter map for each analyzed parameter;

      (f) generating electronically a composite parameter map from the parameter maps of step (e); and

      (g) analyzing the composite parameter map.

2. (Original) The method of claim 1, wherein the ROIs are overlapping.

3. (Previously Presented) The method of claim 1, wherein the two or more positions analyzed are at regular intervals in the image.

4. (Previously Presented) The method of claim 1, wherein the two or more positions analyzed are at irregular intervals in the image.

5. (Previously Presented) The method of claim 1, wherein at least one of the two or more parameters is bone micro-architecture and the two or more positions analyzed are at regular intervals in the image.

6. (Previously Presented) The method of claim 1, wherein at least one of the two or more parameters is bone macro-anatomy and the two or more positions analyzed are at irregular intervals in the image.

7. (Original) The method of claim 1, wherein the image is two-dimensional.

8. (Previously Presented) The method of claim 7, wherein the two-dimensional image is an x-ray image.

9. (Original) The method of claim 1, wherein the image is three-dimensional.

10. (Original) The method of claim 1, wherein the image is an electronic image.

11. (Previously Presented) The method of claim 1, wherein the bone is part of an osteoporosis subject.

12. – 13. (Cancelled)

14. (Previously Presented) The method of claim 1 wherein the analysis of step (d) and/or step (g) is watershed segmentation analysis and/or Markov random field analysis.

15. (Currently Amended) A method of predicting the risk of fracture of ~~a~~ bone using a computer system comprising:

        (a) obtaining image data of the bone in the computer system ~~an image of the bone~~;

        (b) defining two or more positions in the image;

        (c) placing a region of interest (ROI) at each of the two or more positions;

        (d) analyzing electronically each ROI to determine at least one value for one or more parameters selected from the group consisting of bone density, bone micro-architecture, bone macro-anatomy, biomechanical parameters and combinations thereof;

        (e) for each analyzed parameter, assigning electronically the at least one value from each ROI to its respective position, thereby creating a parameter map for each analyzed parameter;

        (f) generating electronically a biomechanical model from the one or more parameter maps of step (e);

        (g) calculating, using the computer system, ~~applying~~ simulated force vectors that would occur during a fracture incident to the generated biomechanical model; and

        (h) determining electronically the minimum forces required for fracture to occur, thereby estimating the risk of fracture.

16. (Currently Amended) A method of predicting the risk of fracture of [[a]] bone comprising:

        (a) predicting a fracture path according to the method of claim 1; and

        (b) evaluating one or more selected bone parameters along the predicted fracture path, thereby estimating the risk of fracture.

17. (Currently Amended) A method of predicting the risk of fracture of [[a]] bone comprising:

      (a) predicting a fracture path according to the method of claim [[14]] 15; and

      (b) evaluating one or more selected bone parameters along the predicted fracture path, thereby estimating the risk of fracture.

18. (Cancelled)

19. (Previously Presented) The method of claim 15, wherein the ROIs are overlapping.

20. (Previously Presented) The method of claim 15, wherein the two or more positions analyzed are at regular intervals in the image.

21. (Previously Presented) The method of claim 15, wherein the two or more positions analyzed are at irregular intervals in the image.

22. (Previously Presented) The method of claim 15, wherein the one or more parameter is bone micro-architecture and the two or more positions analyzed are at regular intervals in the image.

23. (Previously Presented) The method of claim 15, wherein the one or more parameter is bone macro-anatomy and the two or more positions analyzed are at irregular intervals in the image.

24. (Previously Presented) The method of claim 15, wherein the image is two-dimensional.

25. (Previously Presented) The method of claim 24, wherein the two-dimensional image is an x-ray image.

26. (Previously Presented) The method of claim 15, wherein the image is three-dimensional.

27. (Previously Presented) The method of claim 15, wherein the image is an electronic image.

28. (Previously Presented) The method of claim 15, wherein the bone is part of an osteoporosis subject.